

2021 TRANSMISSION

Automatic Transmission - 6L50 (MYB) - Specifications - Canyon, Colorado

SPECIFICATIONS

FASTENER SPECIFICATIONS (ON VEHICLE)

Reusable Threaded Fastener Tightening Specifications

NOTE: <i>All fasteners listed in this table can be reused after removal.</i>	
Application	Specification
	Metric (English)
Auxiliary Transmission Oil Cooler Quick Connect Fittings	25 N.m (18 lb ft)
Auxiliary Transmission Oil Cooler Brace to Skid Bar Bolt	25 N.m (18 lb ft)
Auxiliary Transmission Oil Cooler Bracket to Body Nuts	8 N.m (71 lb in)
Auxiliary Transmission Oil Cooler to Bracket Mounting Bolts	22 N.m (16 lb ft)
Shift Control Assembly Console Bolts	9 N.m (80 lb in)
Shift Control Knob Screw	2 N.m (18 lb in)
Shift Control Linkage to Manual Shift Shaft Nut (AWD)	20 N.m (15 lb ft)
Shift Control Linkage to Manual Shift Shaft Nut (RWD)	15 N.m (11 lb ft)
Torque Converter to Flywheel Bolts	63 N.m (46 lb ft)
Transmission Mount Bolts - 2WD	100 N.m (74 lb ft)
Transmission Mount Bolts - 4WD	72 N.m (53 lb ft)
Transmission Oil Cooler Pipe Clip to Oil Pan Nuts	10 N.m (89 lb in)
Transmission Oil Cooler Pipe Clip to Torque Tube Bolts	12 N.m (106 lb in)
Transmission Oil Cooler Pipes to Transmission Bolt	16 N.m (12 lb ft)
Transmission to Engine Block Bolts	50 N.m (37 lb ft)
Transmission Support Assembly to Body Bolts	60 N.m (44 lb ft)
Transmission Support Assembly to Transmission Bolts - RWD	60 N.m (44 lb ft)
Transmission Support Assembly to Transmission Bolts - AWD	110 N.m (81 lb ft)

FASTENER SPECIFICATIONS (OFF VEHICLE)

Single Use Non-Threaded Fasteners/Components

NOTE: <i>All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.</i>	
Application	
1 - 2 - 3 - 4 Clutch Piston Inner Seal	

NOTE:

All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.

Application

1 - 2 - 3 - 4 and 3 - 5 Reverse Clutch Housing Thrust Washer

3 - 5 Reverse Clutch Bearing

Case Extension Seal

Center Support Fluid Passage Seal

Fluid Filter

Fluid Filter Seal Assembly

Filter Plate Assembly

Fluid Pump Seal

Manual Shift Shaft Pin

Manual Shaft Detent Lever Hub Pin

Turbine Shaft (O-Ring) Seal

Single Use Threaded Fastener/Component Tightening Specifications**NOTE:**

All fasteners/components listed in this table MUST BE DISCARDED and replaced with NEW after removal.

Application	Reference number from Disassembled Views	Quantity	Size	Specification
				Metric (English)
Front Prop Shaft Flange Nut	39	1	-	55 N.m (41 lb ft)

Reusable Threaded Fastener Tightening Specifications**NOTE:**

All fasteners listed in this table can be reused after removal.

Application	Reference number from Disassembled Views	Quantity	Size	Specification
				Metric (English)
Case Extension				
Case Extension to Case Assembly	16	6	M10 x1.5 x 40	55 N.m (41 lb ft)
Transfer Case Adapter	16	7	M10 x1.5 x 40	55 N.m (41 lb ft)
Control Solenoid Valve Assembly and Control Valve Lower Body	310	6	M5 x 0.8 x 55	8 N.m (71 lb in)

NOTE:

All fasteners listed in this table can be reused after removal.

Application	Reference number from Disassembled Views	Quantity	Size	Specification
				Metric (English)
Assembly to Control Valve Upper Body Assembly				
Control Solenoid Valve Assembly and Control Valve Lower Body Assembly to Control Valve Upper Body Assembly	309	10	M5 x 0.8 x 45	8 N.m (71 lb in)
Control Solenoid Valve Heat Sink to Valve Body	312	2	M5 x 0.8 x 53	8 N.m (71 lb in)
Control Valve Upper Body Assembly to Control Valve Lower Body Assembly	301	12	M5 x 0.8 x 36	8 N.m (71 lb in)
Control (with Body and Valve) Valve Assembly to Case Assembly	22	6	M5 x 0.8 x 73	8 N.m (71 lb in)
Fluid Pan Assembly to Case Assembly (6L80)	30	18	M6 x 1.0 x 20	9 N.m (80 lb in)
Fluid Pan Assembly to Case Assembly (6L50)	30	17	M6 x 1.0 x 20	9 N.m (80 lb in)
Fluid Pump Cover Assembly to Torque Converter Housing	231	13	M6 x 1.0 x 40	11 N.m (97 lb in)
Front Prop Shaft Flange Nut to Output Shaft	39	1	M22 x 1.5 x 14	55 N.m (41 lb ft)
Input and Output Speed Sensor Assembly to Control Valve Upper Body Assembly	302	2	M6 x 1.0 x 20	12 N.m (106 lb in)
Line Pressure Test Hole Plug to Torque Converter Housing	202	1	1/8"-27 NPTF	11 N.m (97 lb in)
Manual Shaft Detent Assembly to Valve Body	23	1	M6 x 1.0 x 14.5	12 N.m (106 lb in)
Torque Converter Housing Assembly to Case Assembly (6L50)	3	8	M8 x 1.5 x 50	31 N.m (23 lb ft)
Torque Converter Housing Assembly to Case Assembly (6L80)	3	9	M10 x 1.5 x 50	72 N.m (53 lb ft)
Transmission Cover Bolt	42	2	-	12 N.m (106 lb in)
Transmission Oil Level Check Plug to Fluid Pan Assembly - M6	31	1	M6x 1.75	9 N.m (80 lb in)
Transmission Oil Level Check Plug to Fluid Pan Assembly - M12	31	1	M12 x 1.75	25 N.m (18 lb ft)

APPROXIMATE FLUID CAPACITIES

Application	Specification	
	Metric	English
Pan Removal and Filter Replacement - (6L50)	6.3 liters	6.7 quarts
Overhaul - (6L50)	9.3 liters	9.8 quarts
Complete Transmission System - (6L50)	10.6 liters	11.2 quarts

TRANSMISSION GENERAL SPECIFICATIONS

Name	6L45	6L50	6L80	6L90
RPO Codes	MYA	MYB	MYC	MYD
Production Location	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)	Silao, Mexico; Strasbourg, France; Toledo, OH (USA)
Transmission Drive	Rear Wheel Drive	Rear Wheel Drive	Rear Wheel Drive	Rear Wheel Drive
1st Gear Ratio	4.065	4.065	4.027	4.027
2nd Gear Ratio	2.371	2.371	2.364	2.364
3rd Gear Ratio	1.551	1.551	1.532	1.532
4th Gear Ratio	1.157	1.157	1.152	1.152
5th Gear Ratio	0.853	0.853	0.852	0.852
6th Gear Ratio	0.674	0.674	0.667	0.667
Reverse	3.200	3.200	3.064	3.064
Torque Converter Size - Diameter of Torque Converter Turbine	240/258 mm	245/258 mm	258/300 mm	300 mm
Pressure Taps	Line Pressure	Line Pressure	Line Pressure	Line Pressure
Transmission Fluid Type	DEXRON VIB®	DEXRON VIB®	DEXRON VIB®	DEXRON VIB®
Transmission Type: 6	Six Forward Gears	Six Forward Gears	Six Forward Gears	Six Forward Gears
Transmission Type: L	Longitude Mount	Longitude Mount	Longitude Mount	Longitude Mount
Transmission Type: 50	Product Series	Product Series	Product Series	Product Series
Position Quadrant	P, R, N, D, M	P, R, N, D, M	P, R, N, D, S	P, R, N, D, M
Case Material	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum	Die Cast Aluminum
Transmission Net Weight (Approximate)	75 - 78 kg (165 - 172 lb)	90 kg (198 lb)	95.1 - 103.7 kg (209.7 - 228.6 lb)	110 kg (243 lb)
Maximum Trailer Towing Capacity	Refer to applicable owner's manual	Refer to applicable owner's manual	N/A	Refer to applicable owner's manual

ADHESIVES, FLUIDS, LUBRICANTS, AND SEALERS

Application	Type of Material	GM Part Number	
		United States	Canada
Automatic Transmission Fluid	DEXRONB® VI	88861037	19264717
Front Prop Shaft Flange Nut	Threadlock	89021297	10953488

FLUID PUMP SELECTIVE SPECIFICATIONS

Size Classification	Thickness (mm)	Thickness (in)
NOTE:		

Size Classification	Thickness (mm)	Thickness (in)
• Rotor and slide must be chosen from the same size classification as the oil pump body. • Allowable rotor and slide to fluid pump body end play is as follows: Specification • Slide to Fluid Pump Body End Play - 0.020 - 0.051 mm (0.0008 - 0.0020 in) • Rotor to Fluid Pump Body End Play - 0.020 - 0.051 mm (0.0008 - 0.0020 in) The fluid pump assembly has selective rotor and slide components. These components are chosen based on pump body dimensions. Fluid pump rotor and slide components are available in three size classifications (1, 2, 3) with the following tolerances:		
Rotor Selection		
1	17.948 - 17.961	0.7066 - 0.7071
2	17.961 - 17.974	0.7071 - 0.7076
3	17.974 - 17.987	0.7076 - 0.7081
Slide Selection		
1	17.948 - 17.961	0.7066 - 0.7071
2	17.961 - 17.974	0.7071 - 0.7076
3	17.974 - 17.987	0.7076 - 0.7081

CLUTCH BACKING PLATE RETAINING RING SPECIFICATIONS (6L50)

3 - 5 Reverse Clutch

Clutch Pack Travel Specification - 1.20 - 1.74 mm (0.047 - 0.069 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
NOTE: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
2.24 - 2.34 mm	0.088 - 0.092 in	Purple - Purple
2.25 - 2.35 mm	0.089 - 0.093 in	Light Green - Light Green
2.47 - 2.57 mm	0.097 - 0.101 in	Gray - Gray
2.69 - 2.79 mm	0.106 - 0.110 in	Yellow - Yellow
2.91 - 3.01 mm	0.115 - 0.119 in	Orange - Orange
3.13 - 3.23 mm	0.123 - 0.127 in	Light Blue - Light Blue
3.35 - 3.45 mm	0.132 - 0.136 in	White - White
3.57 - 3.67 mm	0.141 - 0.144 in	Yellow - Purple
3.79 - 3.89 mm	0.149 - 0.153 in	Light Blue - Purple

1 - 2 - 3 - 4 Clutch

Clutch Pack Travel Specification - 1.50 - 1.98 mm (0.059 - 0.078 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
NOTE: After measuring clutch pack travel,		

Clutch Pack Travel Specification - 1.50 - 1.98 mm (0.059 - 0.078 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
2.25 - 2.35 mm	0.089 - 0.093 in	Light Green - Light Green
2.47 - 2.57 mm	0.097 - 0.101 in	Gray - Gray
2.69 - 2.79 mm	0.106 - 0.110 in	Yellow - Yellow
2.91 - 3.01 mm	0.115 - 0.119 in	Orange - Orange
3.13 - 3.23 mm	0.123 - 0.127 in	Light Blue - Light Blue
3.35 - 3.45 mm	0.132 - 0.136 in	White - White
3.57 - 3.67 mm	0.141 - 0.144 in	Yellow - Purple
3.79 - 3.89 mm	0.149 - 0.153 in	Light Blue - Purple

4 - 5 - 6 Clutch

Clutch Pack Travel Specification - 1.17 - 1.76 mm (0.046 - 0.069 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
NOTE: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification,		

Clutch Pack Travel Specification - 1.17 - 1.76 mm (0.046 - 0.069 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
2.24 - 2.34 mm	0.088 - 0.092 in	Purple - Purple
2.52 - 2.62 mm	0.099 - 0.103 in	Light Green - Light Green
2.80 - 2.90 mm	0.110 - 0.114 in	Gray - Gray
3.08 - 3.18 mm	0.121 - 0.125 in	Yellow - Yellow
3.36 - 3.46 mm	0.132 - 0.136 in	Orange - Orange
3.64 - 3.74 mm	0.143 - 0.147 in	Light Blue - Light Blue
3.92 - 4.02 mm	0.154 - 0.158 in	White - White
4.20 - 4.30 mm	0.165 - 0.169 in	Yellow - Purple

2-6 Clutch

Clutch Pack Travel Specification - 1.20 - 1.96 mm (0.047 - 0.077 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
NOTE: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring		

Clutch Pack Travel Specification - 1.20 - 1.96 mm (0.047 - 0.077 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
the measurement within specification.		
1.64 - 1.74 mm	0.065 - 0.069 in	Orange
1.92 - 2.02 mm	0.076 - 0.080 in	Yellow Stripe
2.20 - 2.30 mm	0.087 - 0.091 in	Light Blue Stripe
2.48 - 2.58 mm	0.098 - 0.102 in	Purple Stripe
2.76 - 2.86 mm	0.109 - 0.113 in	Green

Low/Reverse Clutch

Clutch Pack Travel Specification - 1.65 - 2.33 mm (0.065 - 0.092 in)		
Retaining Ring Thickness		O.D. Color
Metric	English	
NOTE: After measuring clutch pack travel, determine if the measurement is within the specification. If the measurement is not within the specification, measure the thickness of the existing retaining ring, and then choose a thicker or thinner retaining ring that will bring the measurement within specification.		
1.98 - 2.08 mm	0.078 - 0.082 in	Orange
2.28 - 2.38 mm	0.090 - 0.094 in	Yellow Stripe
2.58 - 2.68 mm	0.102 - 0.106 in	Light Blue Stripe
2.88 - 2.98 mm	0.113 - 0.117 in	Purple Stripe
3.18 - 3.28 mm	0.125 - 0.129 in	Green

RANGE REFERENCE

Range Reference Table

Range	Park	Reverse	Neutral	Drive						
				1st Braking	1st	2nd	3rd	4th	5th	6th
1 - 2 - 3 - 4 Clutch	-	-	-	Applied	Applied	Applied	Applied	Applied	-	-
3 - 5 Reverse Clutch	-	Applied	-	-	-	-	Applied	-	Applied	-
4 - 5 - 6 Clutch	-	-	-	-	-	-	-	Applied	Applied	Applied
2 - 6 Clutch	-	-	-	-	-	Applied	-	-	-	Applied
Low and Reverse Clutch	Applied*	Applied	Applied*	Applied	-	-	-	-	-	-
Low Clutch Sprag	-	-	-	Holding	Holding	-	-	-	-	-

* = Applied with NO load

SHIFT SOLENOID VALVE STATE AND GEAR RATIO

Gear	Shift SOL 1	Shift SOL 2	1 - 2 - 3 - 4 CL PC SOL 5 N.L.	2 - 6 CL PC SOL 4 N.L.	3 - 5 REV CL PC SOL 2 N.H.	LOW REV 4 - 5 - 6 CL PC SOL 3 N.H.	6L45 6L50 Gear Ratio	6L80 6L90 Gear Ratio
Park	ON	ON	OFF	OFF	OFF	ON	-	-
Reverse	ON	OFF	OFF	OFF	ON	ON	3.200	3.064
Neutral	ON	ON	OFF	OFF	OFF	ON	-	-
1st Braking	ON	ON	ON	OFF	OFF	ON	4.065	4.027
1st	OFF	ON	ON	OFF	OFF	OFF	4.065	4.027
2nd	OFF	ON	ON	ON	OFF	OFF	2.371	2.364
3rd	OFF	ON	ON	OFF	ON	OFF	1.551	1.532
4th	OFF	ON	ON	OFF	OFF	ON	1.157	1.152
5th	OFF	ON	OFF	OFF	ON	ON	0.853	0.852
6th	OFF	ON	OFF	ON	OFF	ON	0.674	0.667

For shift solenoids 1 and 2, "ON" = Solenoid Energized (Pressurized) "OFF" = Solenoid De-energized (No Pressure).
For pressure control solenoids, "ON" = Pressurized, "OFF" = No Pressure

TRANSMISSION FLUID PRESSURE SWITCH LOGIC**Transmission Fluid Pressure (TFP) Switch Logic**

Gear	TFP Switch States			
	TFP SW1	*TFP SW3	TFP SW4	TFP SW5
Park	High	Low	Low	Low
Reverse	Low	Low	Low	Low
Neutral	High	Low	Low	Low
Drive 1st - Engine Braking	High	High	Low	Low
Drive 1st	High	High	Low	High

Gear	TFP Switch States			
	TFP SW1	*TFP SW3	TFP SW4	TFP SW5
Drive 2nd	High	Low	Low	High
Drive 3rd	Low	High	Low	High
Drive 4th	High	High	Low	Low
Drive 5th	Low	High	High	Low
Drive 6th	High	High	High	Low
Drive 6th (Possible additional gear state)	High	Low	High	Low

High = 12V (Switch Open or Pressurized)
Low = 0V (Switch Closed or No Pressure)
Note: All TFP switches are normally closed (NC)
*TFP switch 2 does not exist

TRANSMISSION INTERNAL MODE SWITCH LOGIC

Gear Selector Position	Signal A	Signal B	Signal C	Signal P
Park	LOW	HI	HI	LOW
Park/Reverse	LOW	LOW	HI	LOW
Reverse	LOW	LOW	HI	HI
Reverse/Neutral	HI	LOW	HI	HI
Neutral	HI	LOW	HI	LOW
Neutral/Drive 6	HI	LOW	LOW	LOW
Drive 6	HI	LOW	LOW	HI
Drive 6/Drive 4	LOW	LOW	LOW	HI
Drive 4	LOW	LOW	LOW	LOW
Drive 4/Drive 3	LOW	HI	LOW	LOW
Drive 3	LOW	HI	LOW	HI
Drive 3/Drive 2	HI	HI	LOW	HI
Drive 2	HI	HI	LOW	LOW
Open	HI	HI	HI	HI
Invalid	HI	HI	HI	LOW
Invalid	LOW	HI	HI	HI

HI = Ignition voltage
LOW = 0 volts